

by removing the unopened, perfect disc florets from a young head of each, and leaving only the pistillate ray florets. The heads were then cross pollinated. A control was similarly treated and self pollinated. The heads were protected from insects and allowed to mature. Fully developed and apparently fertile ray achenes were obtained from the control, but only imperfect and partially developed ray achenes were obtained from the reciprocal cross.

Coreopsis californica predominates in the area which may be considered the center of diversity for the subgenus *Leptosyne* in California, cismontane and desert southern California. Considering this fact as well as its wider range and greater abundance, *C. californica* may be thought of as a unit ancestral to *C. Douglasii*. Whether *C. californica* or *C. Stillmanii* should be considered as primitive in the section *Euleptosyne* is questionable. On the basis of distribution, *C. californica* may rank as the most primitive member of the section, but the center of diversity may differ from the center of origin which often proves of greater significance in establishing relationships. The occasional occurrence of one or two smooth, straight awns upon the cupule of *C. Stillmanii* may indicate that this species is primitive in the section.

SECTION TUCKERMANNIA. In their perennial habit and maritime habitat, the two members of this section are highly distinctive among the Californian species of *Coreopsis*. They differ particularly in the arrangement and number of the heads, those of *C. gigantea* being numerous and cymosely clustered on short, leafy peduncles, those of *C. maritima* being few in number on long, essentially naked peduncles.

University of California,
Berkeley, July 6, 1937.

COLOR VARIATION IN DELPHINIUM CARDINALE HOOK.

CHARLES O. BLODGETT AND G. L. MEHLQUIST

Conspicuous variation in flower color within a species in its natural habitat is of some scientific interest. We wish, therefore, to record an observation which to the best of our knowledge has not heretofore been reported.

About four miles southeast of Lompoc, in the northwestern part of Santa Barbara County, California, there exists an extensive natural colony of *Delphinium cardinale* Hook. Through the kindness of Mr. Ian Sinclair of Bodgers Seed Company we were privileged to see this colony on July 17, 1937. The field of approximately eighty acres was on the north slope of a rather steep, thin-soiled hill, covered with loose calcareous rock from low cliffs above. The hillside bore a sparse cover of typical Coast Range chaparral, the shrubs ranging from two to five feet tall. Scattered among these were many plants of the brilliant

scarlet larkspur, varying in height from three to six feet or more. The plants were evidently completely at home in this dry sunny location, sheltered from the stiff cool coast breezes so prevalent in the valley, for there were many magnificent specimens. Interspersed among the plants bearing the typical cardinal colored flowers were a conspicuous number with flowers of paler hue, ranging through several shades of orange-red, orange-yellow, and buff to a clear lemon-yellow with only a trace of cardinal in the spurs. The color-variant forms were of course in the minority, no doubt less than ten percent of the total number of plants, while the pure yellows, though noticeable, were very few. No other consistent differences, such as height, habit, or leaf variations, could be distinguished in the plants.

Similar color variations have been recorded in *Delphinium nudicaule* Torr. & Gray, a closely allied Californian species. In "Delphinium," the book of the American Delphinium Society for 1936, Mr. Carl Purdy (p. 37) mentions such color variations, and Major N. F. Vanderbilt (p. 65) states that he has "described various forms and variations in *D. nudicaule* in a wide range." Neither author indicates whether or not the variations were found in wild plants or in those resulting from garden manipulation.

Division of Genetics, University of California,
Berkeley, October 25, 1937.

GLAUCOCARPUM, A NEW GENUS IN THE CRUCIFERAE

REED C. ROLLINS

The discovery, through recent exploration, of a new genus of plants in the continental United States is rare enough, it seems to me, to merit special consideration. It is not surprising that the more remote parts of the west should yield new species of plants, but it must be conceded that nearly, if not quite, all the native genera are known. Thus when a year ago, Dr. E. H. Graham transmitted to me for identification, specimens of a strange cruciferous plant which he had collected in the Uinta Basin of eastern Utah, the possibility of their belonging to an undescribed genus seemed remote indeed. An exhaustive study at the time, showed that these plants possessed a broad relationship with certain species of "Great Basin" crucifers which have been variously considered to belong to *Thelypodium*, *Thelypodopsis* or *Sisymbrium*. Graham's specimens, though only in flower or in some cases possessing a few immature fruits, revealed distinctive characteristics which indicated that their disposition in any of the known genera was unsatisfactory and at best could be only temporary. Mature fruiting specimens were necessary for a complete analysis of this anomalous species, hence a trip into the Uinta Basin to make collections and detailed field observations was planned. On June 15,